

# AIMXp Short Form TASK GROUP INSTRUCTION

22-Feb-2011 0731

AIMXp 19.1.3.1 17 August 2007

ICN: 4682011769 KeyOp: S11

TGI NO:	COMPONENT NAME: TEMP LPA	TYPE: TCG	PHASE: S	REPEAT: 0	CHG/VER: 0/0									
SHIP/HULL NO: SSN 769	SHIP/HULL NAME: USS TOLEDO	PROJECT: 3050	SYSTEM: 03501	PLANT ID:										
CU PHASE TITLE: STAGE TLPA SYS TO														
PREPARING ACTIVITY:		STATUS: APP		WORKING STATUS:										
PREPARED BY: PAUL REGIS		CODE: 270.3	PHONE: (207) 438-3158	DATE: 2/11/2011										
APPROVED BY: PAUL REGIS		CODE: 270.3	PHONE: (207) 438-3158	DATE: 2/18/2011										
CONCURRED BY:		CODE:	PHONE:	DATE:										
REASON FOR WORK/NEED FOR CHANGE:														
JCN:														
SPECIAL REQUIREMENTS: Cleanliness Requirements														
CU PHASE DESCRIPTION: STAGE COMPONENTS FOR THE TEMP LOW PRESSURE AIR SYSTEM TO THE														
<table border="1"> <tr> <td>WAF REQD: YES <input type="checkbox"/></td> <td>WAF SER. NO/TWD LINE ITEM NO. NO <input checked="" type="checkbox"/></td> <td>N/A</td> </tr> <tr> <td>*SIGN D. Boyd</td> <td>CODE/BADGE: 42179</td> <td>DATE: 2-22-11</td> </tr> <tr> <td>**SIGN N/A</td> <td>CODE/BADGE: N/A</td> <td>DATE: N/A</td> </tr> </table>						WAF REQD: YES <input type="checkbox"/>	WAF SER. NO/TWD LINE ITEM NO. NO <input checked="" type="checkbox"/>	N/A	*SIGN D. Boyd	CODE/BADGE: 42179	DATE: 2-22-11	**SIGN N/A	CODE/BADGE: N/A	DATE: N/A
WAF REQD: YES <input type="checkbox"/>	WAF SER. NO/TWD LINE ITEM NO. NO <input checked="" type="checkbox"/>	N/A												
*SIGN D. Boyd	CODE/BADGE: 42179	DATE: 2-22-11												
**SIGN N/A	CODE/BADGE: N/A	DATE: N/A												
ZONE MANAGER:	ZONE:	COMPARTMENT:	LEVEL:	FRAME:	SIDE: U									
JOB SUMMARY ID:	TOT MAN HR.: 8	TOT DUR:	TOT JML COST:	PLANNING ACCEPTANCE:										
WORK CERTIFICATION SIGNATURES: DLs														
COMPLETION OF WORK REVIEW:		BADGE NO: 41921	SHOP/CODE: Y-99	PHONE: 1343	DATE: 3/2/11									
RECORDS REVIEW: D. Boyd		BADGE NO: 42179	SHOP/CODE: 322	PHONE: 2239	DATE: 3-4-11									



\* 4 6 8 2 0 1 1 7 6 9 S 1 1 \*

MASTER

**AIMXp Short Form TASK GROUP INSTRUCTION****22-Feb-2011 0731**

AIMXp 19.1.3.1 17 August 2007

(Continued)

ICN: 4682011769

KeyOp: S11

TGI NO:	COMPONENT NAME: TEMP LPA	TYPE: TCG	PHASE: S	REPEAT: 0	CHG/VER: 0 / 0
SHIP/HULL NO: SSN 769	SHIP/HULL NAME: USS TOLEDO	PROJECT: 3050	SYSTEM: 03501	PLANT ID:	
CU PHASE TITLE: STAGE TLPA SYS TO					

TASK NAME / TASK DESCRIPTION	SHOP/ TSD	TS	SF WC	CREW #	MHRS	RWRK
STAGE TLPA SYS TO STAGE COMPONENTS FOR SUPPLYING TEMP LOW PRESSURE AIR TO THE	99 / T3	TP		1	8	N

**ATTACHMENT LIST**

TITLE	FILE NAME
TSM CHP 101 - MECH STAGING AND TESTING	TSM CHP 101 - Mech Staging and Testing.doc
TSM CHP 316 - STAGE	TSM CHP 316 - Stage.doc

**MASTER**

**SSN 688 Class Temporary Systems Manual****Chapter 101****Mechanical System Staging and Hydrostatic Testing**

Standard Procedure (SP) for Staging and Hydrostatic Testing of Temporary Mechanical Systems.

**Temporary Systems Engineering:**

Nicholas Zinck	270.3	207-438-3702	5/20/08
ENGINEER	CODE	PHONE	DATE
Wilber Heath	270.3	207-438-3101	5/20/08
ENGINEER	CODE	PHONE	DATE
Martin Sullivan	270.3	207-438-3194	5/20/08
ENGINEER	CODE	PHONE	DATE
Eric Barry	270.3	207-438-3181	5/20/08
ENGINEER	CODE	PHONE	DATE
Todd Crawford	270.3	207-438-3199	5/20/08
SUPERVISOR APPROVAL	CODE	PHONE	DATE



## SSN 688 Class Temporary Systems Manual Chapter 101

### 1. REFERENCES:

Ref. No.	Document/Drawing Number	Document/Drawing Title
1	PI 103	Temporary Shore Service
2	BCP-1	Brazing Specifications
3	PI 354	Ships Systems; Freeze Protection

### 2. GENERAL REQUIREMENTS:

- 2.1. Hydro pressure is normally indicated in the referring TSM chapter. If pressure is not stated, use 1 ½ times the hose service pressure (for instance, if a hose service pressure is 150 psi it is hydro-tested at  $150 \times 1.5 = 225$  psi).
- 2.2. In the event that piping assemblies require brazing repair or fabrication, brazing is to be done by personnel trained per TIMS #77500E1 (minimum). Use BCP-1 as a guide when brazing. Temporary Service Pipework personnel do not need to be listed on the "Brazer Qualification Roster." Provide adequate support to maintain proper alignment and gap(s) within joint(s). Pay special attention to heating the mating components properly so braze filler alloy flows in the joint gap. Avoid application of stresses while heated, especially in the braze alloy melting temperature range. After properly cooling brazed assemblies, clean flux and residues from assemblies and visually inspect for cracks. Visible cracks are unacceptable.
- 2.3. Stock numbers for items listed in the Parts List(s) are acceptable sources and are not meant to be mandatory. Approved materials for valves and fittings are: Copper, Brass (not allowed in-sea water systems), Bronze, CuNi, NiCu, Cres, and (for valve bodies only) Cast Iron. If required to facilitate system installation, Temporary Services Pipework may make the following minor deviations: type of approved material; type and/or number of fittings such as the addition of camlocks, the addition or deletion of elbows to preclude hose crimping; substitutions such as threaded fittings in lieu of Sil-Braze fittings or vice versa, the use of a tee and reducing bushing(s) in lieu of a reducing tee, or interchanging ball, butterfly, and gate valves. Other deviations of similar vein and hence, of a minor nature are also allowable. No deviations are permitted which may affect the hydrostatic integrity of the temporary system and no unspecified reducing/flow restricting devices shall be installed in any line. Any questions can be addressed to Temporary Systems Engineering, Bldg 86A/3, extension 3199.
- 2.4. The preference is for the Temporary System valves to have round or oval handwheels. Temporary system valves having levers must have either a positive locking device or a preventive maintenance cover.
- 2.5. Figure(s) are not to be considered an absolute arrangement. The drawings are meant to be used as a guide to depict: (1) system and/or inspection boundaries; (2) respective positions of major components; and (3) the location of signs and Ship's Force Operational Control (SFOC) tags.
- 2.6. Stage the hose assembly in such a manner so as the overall length will be minimized. Minimize the number of connecting joints by maximizing the individual hose lengths, as much as practical. If used, secure camlocks with tie-wraps or wire along with cloth backed tape, or equivalent.



## SSN 688 Class Temporary Systems Manual Chapter 101

### 2. GENERAL REQUIREMENTS: (Cont'd)

- 2.7. Do not use Tru-Seals when making up threaded connections. All NPT joints shall be either seal brazed or use Pipe-Tite Stik (NSN 8030-00-902-5514) sparingly on the male threads only. Unless seal brazing (whereupon medium torque using wrenches is adequate), threaded fittings shall be hand tightened to the indicated number of threads, then fully wrench tightened to at least the minimum length of thread engagement indicated in Table 1 below.

**Table 1: Minimum Thread Engagement**

Nominal Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1 1/2	2	2 1/2
Hand Tightened (thds +/- 1)	4 1/3	4	4 1/3	4 1/2	4 3/4	4 1/2	4 3/4	5	5 1/2
Wrench Tightened (in)	1/4	3/8	3/8	1/2	9/16	11/16	11/16	3/4	15/16

- 2.8. Valve Operating Characteristics - Ensure valves operate so that they follow the normal convention. On/Off type valves such as ball and butterfly valves shall operate such that the valve is SHUT when the handle is perpendicular to the flow and the valve is OPEN when the handle is in-line with the flow. All Valves shall operate such that the valve shuts when the handle is rotated clockwise and opens when the valve is rotated counterclockwise. If installed, ensure the valve position indicator correctly reports the OPEN/SHUT status of the valve. Only use valves in this Temporary System that conform to the normal convention.

- 2.8.1. If existing On/Off type valves such as ball and butterfly valves do not follow the operating characteristics described above, correct by one of the following methods:

2.8.1.1. Attempt to reconfigure the valve so that it follows normal convention.

2.8.1.2. Replace with a valve that follows normal convention.

2.8.1.3. Mark the direction of rotation to OPEN on the valve handle with plastisol as shown in Figure A.



**Figure A**

- 2.9. Provide freeze protection for this temporary system per the invoking TSM chapter and Reference 3 (PI 354). Freeze prevention quick disconnects are under Shipyard (Temporary Services Pipework) control and are connected/disconnected as required by Reference 3 (PI 354).
- 2.10. Examine rubber seals and gaskets for pliability and permanent set of the rubber. Replace rubber inserts, which are brittle, cracked or permanently set. If used, examine female camlock cam arm pins for proper installation and corrosion. Cam arm pins that are removable using normal hand pressure or that are corroded are not acceptable. Do not install unacceptable components in temporary systems.
- 2.11. Each individual hose length running inside the hull shall be labeled/tagged on each and (jumpers up to 8 feet long need only one tag) identifying its off-hull source valve numbers, the service (i.e.; supply, discharge, bypass, etc.) and the component being served (i.e. System Name).



## SSN 688 Class Temporary Systems Manual Chapter 101

### 3. PROCEDURE:

- 3.1. Pre-Stage material and perform as much system assembly work as practical prior to installation.
- 3.2. When needed perform brazing fabrication or repair of assemblies. Refer to General Requirement 2.2. As much pre-installation assembly work as possible shall be accomplished. Perform fabrication work prior to establishing cleanliness.
- 3.3. Identify and stage components (fittings and valves) as listed in the referring TSM Section Parts List and Figures. Refer to General Requirements 2.3 and 2.4. Visually inspect to the maximum extent practical the internals of fittings, manifolds, and assemblies for excessive pitting, corrosion, or erosion problems. Replace union o-rings.
- 3.4. Identify and stage hose assemblies as listed the Parts List and Figures. Refer to General Requirement 2.6. Ensure all staged hose assemblies have been previously inspected, tested, certified, and tagged per this document and PI 103.
- 3.5. Prepare and, where possible, affix required postings (signs, tape, tags, labels, and stickers) Refer to General Requirement 2.5. Valve ID's shall be from the Parts List and Figure. Service lead tags must be installed at installation per WTM 5.7.
- 3.6. Valves and/or components must be hydrostatically tested as follows:
  - 3.6.1. Hydrostatic Test Requirements - Hydrostatically test all valves (in the OPEN position), fittings, assemblies, and manifolds (excluding gages) to the hydro test pressure specified in the referring TSM chapter for at least five (5) minutes. No external valve stem leakage is allowed. Reduce to valve seat test pressure (specified in the referring TSM chapter) and cycle valves (i.e. turn handle from the fully OPEN to the fully SHUT position and back) several times to assure proper operation. Test valves for seat tightness as described below. After checking for seat tightness, bleed pressure to ambient and check for permanent deformation. No permanent deformation is allowed.
  - 3.6.2. Valve Seat Tightness Requirements - Test seat tightness of temporary system valves by SHUTting each valve (w/ valve seat test pressure specified in referring TSM chapter) and bleeding the pressure downstream. After the system has stabilized, check for/measure the internal valve seat leakage for three (3) minutes. The maximum allowable leakage is determined by the type of valve seat versus its size and is provided in Table 2. Ball, globe, and butterfly valves are normally soft seated and gate valves are normally hard seated.

**Table 2: Allowable Valve Seat Leakage**

	1/4" - 1" IPS Nominal	1 1/2" IPS Nominal	2 1/2" IPS Nominal
Soft Seat	1 cc	1 1/2 cc	2 1/2 cc
Hard Seat	5 cc	7 1/2 cc	12 1/2cc

- 3.7. Hose Testing & Tagging Requirements – If not already done, test and inspect hose assemblies in accordance with Enclosure 1.2.9 of PI 103. Install Hydrostatic Data tags on each hose length. The tags will include Hydrostatic Test Pressure and Date.

**SSN 688 Class Temporary Systems Manual**

**Chapter 316**

**Temporary LPA to** [REDACTED]

**Section: 316 - Stage**

Instructions to Stage the Temporary Low Pressure Air to [REDACTED]

Invoking Job Order: 4682011769 S11

**Temporary Systems Engineering:**

<u>Evan Gray</u>	<u>270.3</u>	<u>207-438-3263</u>	<u>02/17/2011</u>
ENGINEER	CODE	PHONE	DATE
<u>Wilber Heath</u>	<u>270.3</u>	<u>207-438-3101</u>	<u>02/17/2011</u>
SUPERVISOR APPROVAL	CODE	PHONE	DATE

**Concurrences:**

None

**MASTER**

Page 1 of 25

*D. Boyd* 42179  
2-22-11

Change: 0



## SSN 688 Class Temporary Systems Manual Chapter 316 – Stage

### 1. REFERENCES:

Ref. No.	Document/Drawing Number	Document/Drawing Title
TGI	See the TGI References	See the TGI References
1	PI 390	Non-Nuclear - Interface / Support Systems Control Procedure
2	UIPI 5050-450	[REDACTED] Cleanliness
3	TSM CHP 101	Mechanical System Staging and Hydrostatic Testing
4	DWG 208-5214711	PPG ARR [REDACTED]

### 2. GENERAL REQUIREMENTS:

- 2.1. Temporary Services Pipework is the Lead Shop.
- 2.2. Ensure there are adequate fittings, valves, and manifolds/assemblies available in a state of readiness to repair/replace components in a timely manner in case of a failure.
- 2.3. Systems Cleanliness downstream and including filter (F-3) of F-2 is [REDACTED] "clean" per Reference 2 (UIPI 5050-450). The system cleanliness upstream of F-2 is free of loose contamination.

### 3. PROCEDURE:

- 3.1. Stage the Temporary System per Figure 1 and parts list using Reference 3 (TSM CHP 151) for testing and general guidelines. Test Pressure is 180 psig for all components and Hose H-1. These are the temporary low pressure air supply line from the air manifold (F-1) connection TALP-31 and TALP-34 to [REDACTED] respectively. [REDACTED] are located per reference 4.

All components and hose staged for use in this system have been satisfactorily tested per Reference 3 (TSM CHP 101).

Signature [Signature] Badge No. 44382 Date 2-26-11

- 3.2. Assemble threaded fittings using Pipe-Tite Stik (NSN 8030-00-902-5514). Apply sealant to the external threads only. Wipe all residue from internal and external surfaces. When using sealant, wait the required cure time before pressurizing.

- 3.3. Verify or establish cleanliness of all staged components per Reference 2 (UIPI 5050-450).

All components staged for use in this system are clean per Reference 2 (UIPI 5050-450).

Signature [Signature] Badge 44382 Date 2-26-11



**SSN 688 Class Temporary Systems Manual Chapter 316 – Stage**

**3 PROCEDURE (Cont'd)**

3.4. Palletize the equipment for shipping.

3.5. Verify that staging of Temporary LP Air to [REDACTED] complete.

Staging of Temporary Low Pressure Air to [REDACTED] is complete.

Signature [Signature] Badge No. 44381 Date 2-26-11

3.6. Fabricate the following tags. Per Enclosure 1.5.2.2 of Reference 1 (PI 390).

3.6.1. Fabricate identification tag: "TALP-31 SUPPLY-SHIPS 100 PSI AIR [REDACTED]"

3.6.2. Fabricate identification tag: "TALP-34" SUPPLY-SHIPS 100 PSI AIR [REDACTED]"

3.6.3. Fabricate identification tag: "TALP-41 ISOLATION-SHIPS 100 PSI AIR [REDACTED]"

3.6.4. Fabricate identification tag: "TALP-42 ISOLATION-SHIPS 100 PSI AIR [REDACTED]"

3.6.5. Tag hose, H-1, connections with: "SERVICE CONNECTION -- 100 PSI AIR [REDACTED]"

3.6.6. Tag hose, H-1, connections with: "SERVICE CONNECTION -- 100 PSI AIR [REDACTED]"

**SSN 688 Class Temporary Systems Manual Chapter 316 – Stage**

Parts List			
Pc No.	Qty.	Description: Size, Material, Part/Stock Number	Remarks
All material is available in the Temporary Services Shop unless otherwise specified.			
F-2	1	Air manifold, 4 <del>(1 1/4")</del> <sup>1"</sup> valves, dual filter elements. *	Available Temporary Services Shop (Bldg 299)
F-3	1	Filter element, 3 micron, fiber, FilteRite: DFN 3-10-AN	Part of F-2
F-4	1	Filter element, 70 micron, mesh, CRES, FilteRite: PWC 70-10-A-DOE	Part of F-2
F-7	1	Reducing Bushing, <del>1 1/4"</del> <sup>1"</sup> X 1/2", NPTF *	
F-9	2	Connector, 1/2" Tubing Barbed X 1/2" NPT, Brass, Parker 8-8B2HF or Equal	
F-10	4	Clamp, Hose, 1/2" Min. ID, CRES	
F-12	1	Sealant, Loctite Grade A, Red, Stk # 8030-LL-L00-9441	Allow minimum cure time before pressurizing sealed joint
H-1	<del>300'</del> <sup>50' X 2</sup>	Hose, 1/2" ID, Reinforced, PVC, Nylabraid or Equal *	
P-1	2 ft	Tubing, 3/8" OD x 0.049" Wall, CRES	Length between tee and valves are to be approx 3", vent line is Shops discretion.
TALP-41	1	Valve, 3/8" TS, 3000#, CRES 316, 30° blunt stem, Parker Hannifin 6Z-V6LR-SS, S/N 4820-LL-L01-0379 DF or Equal	Available from SS56
TALP-42	1	Valve, 3/8" TS, 3000#, CRES 316, 30° blunt stem, Parker Hannifin 6Z-V6LR-SS, S/N 4820-LL-L01-0379 DF or Equal	Available from SS56

\* *Blair* 46810 26 FEB 2011  
CORRECT TYPOGRAPHICAL ERROR

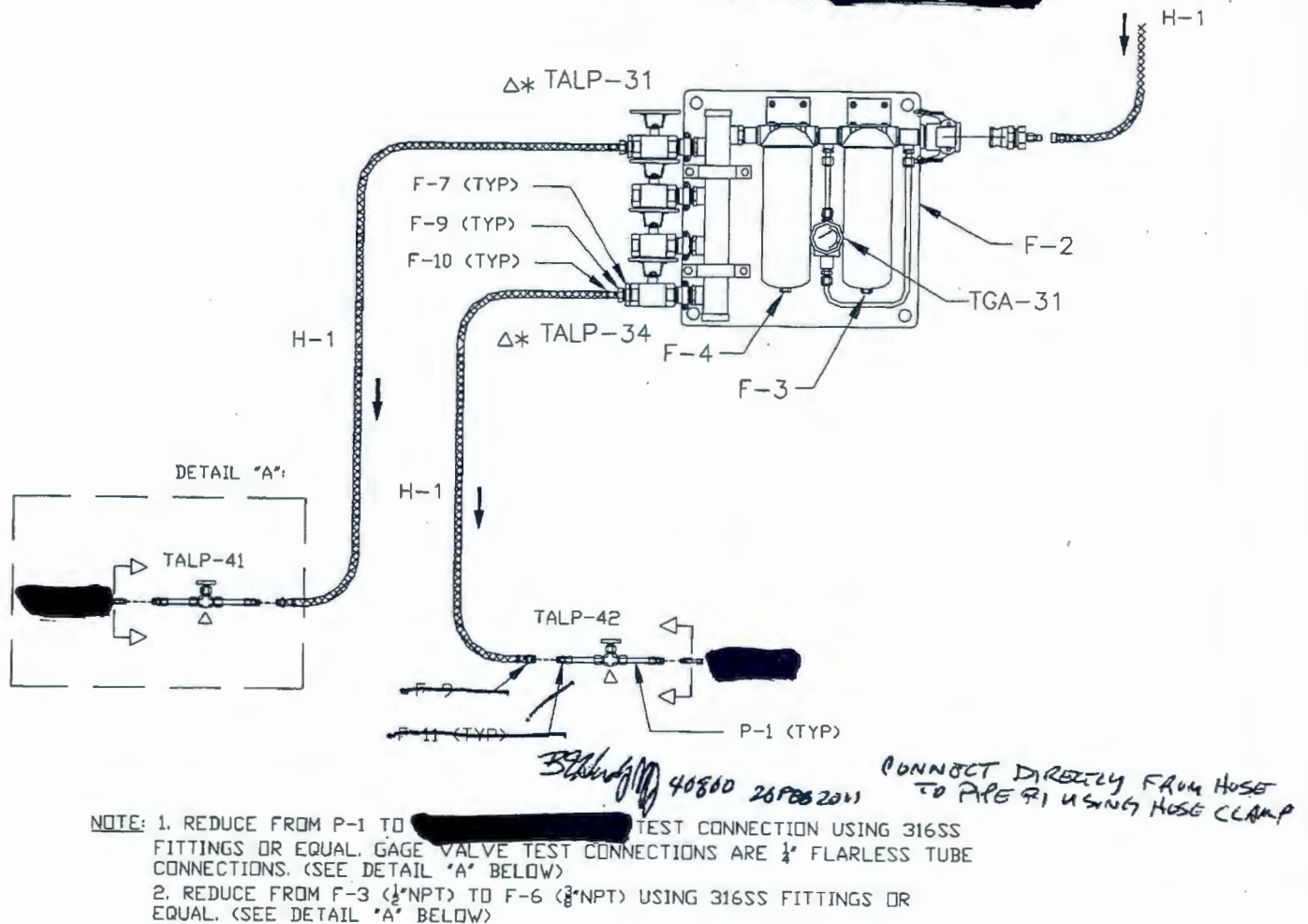


# SSN 688 Class Temporary Systems Manual Chapter 316 – Stage

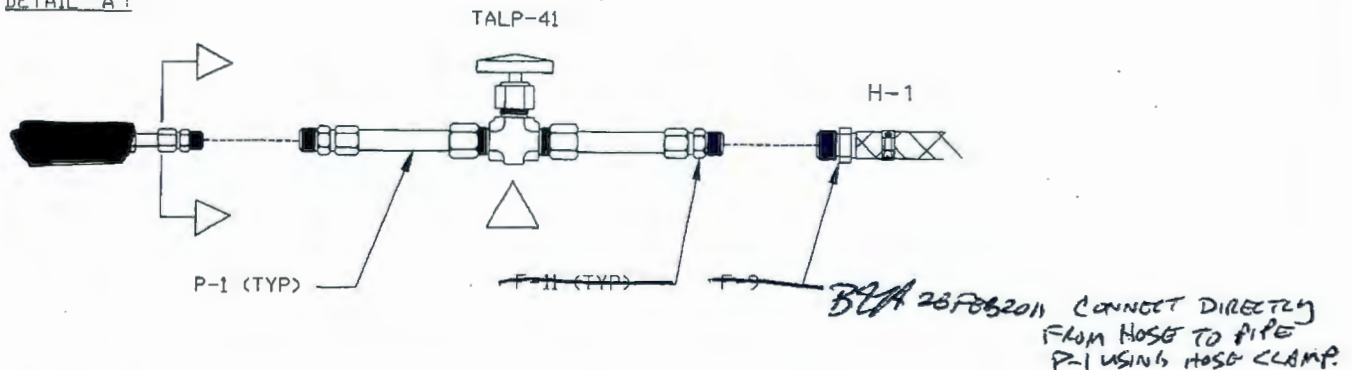
**Figure 1**

Temp 100 PSIG to [REDACTED]

LOCATE IN THE [REDACTED]  
IN THE VICINITY OF THE [REDACTED]



DETAIL "A":



\* NON NUC INTERFACE SUPPORT SYSTEM SIGN

△ SHIP'S FORCE OPERATIONAL CONTROL

NON NUC INTERFACE SUPPORT  
SYSTEM BOUNDARY

"—" DENOTES SHIP'S SYSTEM

BRIEFING/HISTORY/TURNOVER RECORD  
NAVSHIPYD PTSMH 4730/243 (REV 12-06)

Required by PRODEPT INST 4730.15

1. TWD

2. JO

TEMP LPA [REDACTED] TCG.S.O

4682011769 S11

REQUIRES IN-DEPTH DISCUSSION

- WAF stamp authorized?  
Partial WAF controls reviewed?  
Component location identified?  
IWB work instructions clear?  
PPE requirements discussed?  
Shipboard cleanliness/collateral  
damage avoidance discussed?  
SUBSAFE Controls discussed?  
Unapplicable?

## GENERAL

- Y Assist trades/codes needed/notified?
- Y Lessons learned reviewed?
- Y Worksite PMG adequate?
- Y Worksite visited and Sat?
- Y Mechanic has correct/valid qualification(s) in ATMS
- Y Mechanic participates in an interactive briefing with Supervisor
- Y Discuss step tracking process (O's/X's)

### RADIOLOGICAL CONTROLS

- Y TWD contains @?
- Y Personnel exposure status?
- Y Exposure reduction techniques discussed, time, distance and shielding?

### MATERIAL CONTROL/CLEANLINESS

- Y Discuss need to ensure material matches "M" sheet
- Y TWD cleanliness requirements?
- Y Accountability Controls?
- Y Proper use of QA-2 tags

## SAFETY REQUIREMENTS

- ✓ Medical stressors current?
- ✓ Haz waste/material controls?
- ✓ Special safety requirements?
- ✓ JSA plan discussed?

## SUBSAFE CONTROLS

- Copy of REC in package?
- Scope of work = Scope of REC?
- Work released by WP?
- DL's/DF's reviewed by WP?

## SOFTWARE

- When and how to complete QA forms?
- Plans/references?
- History/turnover record?
- Signature requirements clear?
- Special controls/sequence of work?
- Review DF's

3. SIGNATURE BELOW INDICATES THAT AN IN-DEPTH DISCUSSION AND INTERACTIVE BRIEFING WAS COMPLETED SATISFACTORILY. MECHANIC READY TO BEGIN WORK IAW ATTRIBUTES ABOVE. DISCUSS KEY POINTS AND LIST EXPECTATIONS ON JOB HISTORY RECORD. SUPV(S) AND MECH(S) SIGN, BN & DATE. CHECK BLOCK WHEN REDUCED SCOPE BRIEFING IS UTILIZED.

## CERTIFICATION of BREEDING

[illegible]

Note: Supervisor signature also verifies that positive identification of the ship, compartment, system and component to be worked has been discussed and the mechanic acknowledges awareness of ship, compartment, system and component to be worked.

Enclosure (1)

Sheet 1 of 2



Enclosure (1)  
Sheet 2 of 2